REMARKS

Reconsideration and allowance of the subject application are respectfully requested.

Claims 1-11 and 13-26 are pending in the application. Claim 1 has been amended to incorporate the subject matter of dependent claim 12. Further basis for the amendment of claim 1 is disclosed in the specification at page 4, line 27 – page 5, line 5, page 8, lines 20-22, and Figure 1, piston 32 within trough 24. Claims 10 and 13 have been amended to correct minor informalities. No new matter has been added.

The objection to claim 13 on page 2 of the Office Action is obviated by the amendment to claim 13 set forth above. Accordingly, withdrawal of the objection is respectfully requested.

The rejection of claims 1-12, 14, 16 and 17 under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,068,804 (Betzner) is respectfully traversed. Betzner does not anticipate the claimed invention for the following reasons.

Claim 1 has been amended to clarify that the slurry dewatering step is effected by applying compression. Basis for this is seen in the specification at page 4, line 27 – page 5, line 5, page 8, lines 20-22, and Figure 1, piston 32 within trough 24.

In contrast, Betzner describes the product of an aqueous slurry of a composition comprising lignocellulose fibers and asphalt. The composition is subsequently de-watered and inter alia, dried. Betzer is totally silent on the production and use of an asphalt-free lignocellulose product. Thus, Betzer cannot constitute anticipation of producing a dried, shaped asphalt-free lignocellulose fiber material product per se, nor disclose nor teach subsequent impregnation of a resin to provide the advantageous composite material, shaped or otherwise, according to the present invention.

In the present invention, the resin is impregnated into the dried, shaped fiber material. The presence of water of a slurry is contrary to the teachings of the present invention, for example, given at page 5, lines 8-19, page 6, line 6, page 8,

lines 23-25 and Figure 1, drying oven 34. The resin contacts the pre-dried lignocellulose material.

In Betzner, the asphalt particles that are considered to be a waterproofing agent are combined with the fiber during and not after the board formation (column 2, lines 46-48). This does not lead a skilled person to add a waterproofing agent or binder to the fibers after the fibers have been formed. The present invention, on the other hand, depends on impregnating the fiber with the resin after the fiber shape has been formed.

The purpose of Betzner is to produce fiberboards employed as durable, resilient expansion joints between various types of structural members. In contrast, the formed composite material of the present invention is for use as the structural member.

Further, Betzner teaches how to produce its water-resistant board continuously on a felting machine such as a Fourdrinier, Oliver filter, or ordinary cylinder machine (column 2,lines 25-28). In consequence of the nature of these machine types, a person skilled in the art implicitly understands that this places an upper limit on the thickness of the board material being formed. Therefore, from Betzner, a skilled person cannot anticipate the production of a material that has a thickness much greater than typical board thickness. The present invention, because of its discreet shape formation, has no such dimensional boundaries.

Yet further, Betzner describes the possibility of adding a third component to the slurry. Rubber particles can be added that will allow an expansion joint material to recover its thickness after compression (column 3, lines 27-28). This demonstrates even less anticipation or teaching of producing a fiber-only, dried fiber material as taught by the present invention.

In view of the many differences between the claimed invention and Betzner, withdrawal of the Section 102 rejection is respectfully requested.

The rejection of claims 23 and 24 under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Betzner is respectfully traversed. Claims 23 and 24 are not anticipated or obvious over Betzner for the same reasons claim 1 is not anticipated or obvious over Betzner, as

discussed above. Accordingly, withdrawal of the Section 102 and 103 rejections is respectfully requested.

The rejection of claim 13 under 35 U.S.C. § 103(a) as being unpatentable over Betzner is respectfully traversed. Claim 13 is not obvious over Betzner for the same reasons claim 1 is not obvious over Betzner, as discussed above. Accordingly, withdrawal of the Section 103 rejection is respectfully requested.

The rejection of claim 15 under 35 U.S.C. § 103(a) as bening unpatentable over Betzner in view of U.S. Patent No. 6,086,720 (Bodary) is respectfully traversed. Claim 15 is not obvious over Betzner for the same reasons claim 1 is not obvious over Betzner, as discussed above, and for the following reasons. There is no motivation or guidance to combine the teachings of Bodary with Betzner. For that reason alone, the Section 103 rejection should be withdrawn.

Even if Bodary and Betzner were combined, claim 15 would not be obvious over the theoretical combination for the following reasons.

Bodary describes how a main screen is raised through a fiber slurry filled tank where the fibers accumulate onto the surface of the screen as the screen ascends (column2, rows 23-35). Prior to the main screen being lifted from the liquid, a retainer screen is lowered against the main screen in order to sandwich the fibers so that they do not fall off of the contoured main screen by gravity once out of the liquid. One of ordinary skill in the art would recognize that the equipment is not intended to exert any type of compressive pressure on the fiber but simply intended to improve on previous technology (column 1, line 56 to column 2, line 8) in order to retain the loose fiber in position until it can be dried. Therefore there is nothing in Bodary that would lead the skilled person to adopt the multi-dimensional compression means of the present invention in order to produce a preform with a specific dry bulk density.

Furthermore, one of ordinary skill in the art would easily recognize from the description of the equipment presented in Bodary that no appreciable thickness of fiber could be accumulated on the main screen and that its only interest is in controlling fiber deposition on the contoured main screen (column 2, rows 20-22). Consequently, Bodary could not result in a preform with more than sheet like dimensions and, as a result, the skilled person would not be lead by Bodary to adopt

the compressive technique of the present invention to produce a preform with substantial thickness, of at least 5mm.

In view of the lack of motivation to combine Bodary with Betzner, and the many differences between the claimed invention and the theoretical combination of Bodary and Betzner, withdrawal of the Section 103 rejection is respectfully requested.

The rejection of claims 18-22, 25 and 26 under 35 U.S.C. § 103(a) as bening unpatentable over Betzner in view of U.S. Patent No. 6,403,000 (Symons) is respectfully traversed. The claimed invention is not obvious over Betzner for the same reasons claim 1 is not obvious over Betzner, as discussed above, and for the following reasons. There is no motivation or guidance to combine the teachings of Symons with Betzner. For that reason alone, the Section 103 rejection should be withdrawn.

Even if Symons and Betzner were combined, the claimed invention would not be obvious over such a theoretical combination for the following reasons.

Symons describes the manufacture of a finished product comprising impregnating lignocellulose material with a composition of mineral oil (5-30% w/w on lignocellulose basis) and a liquid thermosetting resin (1-20% w/w on lignocellulose basis) for the purpose of making the lignocellulose product waterproof.

In Symons, impregnation consists of applying a resin/mineral oil solution to the exterior surfaces of the dry fiber material and then physically compressing the material (thereby reducing the thickness of the material) to promote infusion into the interior (column 1, lines 56-58). There is nothing in Symons that leads one of ordinary skill in the art not to use physical compression to impregnate the dry fiber material with the resin/mineral oil. In contrast, the present invention relies on the ability of a dry, hydrogen bonded lignocellulose fiber shape to absorb the liquid resin without swelling, thereby, not requiring a thickness reducing compression step.

In Symons, curing consists of subjecting the impregnated fiber shape to temperatures as high as 220 C and pressures as high as 800 psi in a mould or suitable press for 20 seconds per mm of material thickness (column 3, lines 1-6). In contrast, the present invention, preferably, but not exclusively, maintains curing

temperatures below 100 C in order that water generated during PF (phenol formaldehyde) resin curing does not boil inside the material, which could cause it to rupture. Therefore, in order to accommodate D2 conditions while using a PF resin, a person skilled in the art would maintain the resin concentration well below what would be required to make the material structural. Consequently, there is nothing in Symons that would lead the skilled person to adopt the impregnation or curing conditions of the present invention.

In Symons, the mineral oil serves as a carrier for the resin and therefore low percentages of liquid resin can be applied while still maintaining good resin distribution throughout the material (column 8, lines 23-25). Also the oil acts as a hydrophobic agent preventing water penetration (column 8, lines 29-33). From this, a skilled person will conclude that the function of the resin in Symons is simply to keep the material together while the oil is there to render it waterproof. In contrast, the present invention relies on the liquid PF resin to fill the fiber material and to serve both of these functions as well as to render the cured material structural.

The crux of Symons is to minimize external water contact with the hydroxyl groups of the lignocellulose by the interposition of a hydrophobic cohesive film formed by the mineral oil/thermosetting resin. Symons acknowledges the prior art objective of minimizing hydrogen bonding by reducing the number of available hydroxyl groups in the lignocellulosic materials by chemical modification with anhydrides.

In contrast, the present invention does not require the use of mineral oil or chemical modification with anhydrides to achieve the objective of a shaped product having the desired long life span and strength:weight.

Thus, there is nothing in Symons to lead one of ordinary skill in the art <u>not</u> to use mineral oil in the production of lignocellulose-resin products for water proofing purposes only.

It can be, thus, clearly seen that it would not be obvious for one of ordinary skill in the art to combine the teachings of Betzner with Symons, to conceive instant invention as claimed. And, even if Betzner was combined with Symons, the claimed invention is not obvious over such a theoretical combination. Accordingly,

withdrawal of the Section 103 rejection is respectfully requested.

In view of all of the rejections of record having been addressed, it is submitted that the present application is in condition for allowance and Notice to that effect is respectfully requested.

Respectfully submitted,

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